

THE STANCIL-HOFFMAN CORPORATION

921 NORTH HIGHLAND AVENUE • HOLLYWOOD 38, CALIFORNIA



PLUG-IN AMPLIFIERS FOR CONSOLES, FILM AND TAPE RECORDERS, AND AUDITORIUM USE

In designing the new electronic section for our Model S7 magnetic film recorder, we realize that we have developed some critically needed plug-in amplifiers.

Enclosed are sheets covering six of the family of about twelve amplifiers which include automatic gain control, compression amplifiers, electronic switch amplifiers to operate indicator lamps or relays, RIAA equalized disc preamps and power amplifiers. Data on these added amplifiers will be mailed soon.

We know you will be interested in the power amplifier. Designated as Model AW70H, it is mounted on an octal plug and measures 4-3/4" x 5" x 3". The construction consists of two heat sinks forming the mounting frame for two printed circuit cards. One card, the AH70H, carries its components. The card on the opposite surface is the AE70 which acts as a bridging preamplifier with about 40DB gain offering either a switch controlled flat response or continuously variable controls for 12DB boost at 20 cycles and 12DB at 25,000 cycles. In the "flat" position, the amplifier with or without the preamp is flat from 8 cycles, or lower, to 100,000 cycles. It is down 3DB at 43KC and being direct coupled, there are no bumps or valleys.

The tremendous charm of the AW70H is that it directly feeds speaker voice coils without transformers. Rated at 15 watts, it is conservatively capable of 20 to 25 watts R. M. S. at less than 1% total harmonic distortion. Our measurement is to read the voltage across a 15 ohm resistor -- its ideal impedance -- and calculate the power. By present marketing standards these would be rated at 60 to 75 watt amplifiers!

A plug-in power supply, designated as P72, handles two AW70H/AE70's at full output for stereo. It also includes a regulated 20 volt output for the AP70 tape preamp or the AD70 disc preamps in stereo.

It takes +7DBM to drive the AW70 to full output, and it may be ordered for this application without the AE70 preamp. With the AE70, you can obtain full output from -30DBM along with the equalization capability.

Pricing will be complete by the time we hear from you and we know that the P72 will be less than \$100.00 as will the AW70H/AE70 combination.

DESCRIPTION

The AL-70 microphone preamplifier is a compact, plug-in unit having extremely low noise and distortion. High gain, through a broad linear response, is obtained in a stable, three stage circuit employing superior silicon transistors. Hum and microphonics are completely absent. Careful design and choice of components assure maintenance-free operation. An integral control allows presetting the gain to match any microphone application. All circuits terminate in a standard octal plug.

When used with professional microphones, a separate input transformer is required.

The AL-70 microphone preamplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

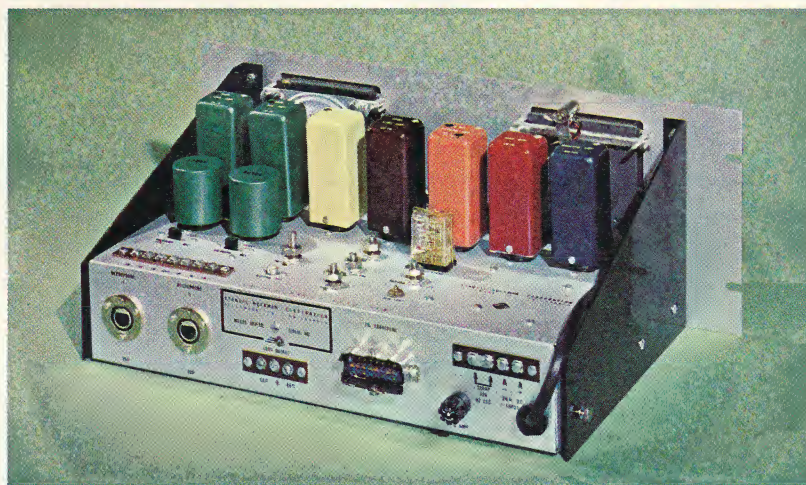
APPLICATION

The outstanding performance, compact and rugged design, ease of installation and low power requirements of the AL-70 microphone preamplifier well suit it for installations involving:

- A. Custom studio consoles
- B. Compact portable mixers

FEATURES

- Low noise silicon transistors (lower noise than most premium vacuum tubes)
- High temperature stability
- No microphonics
- Low distortion
- Plug-in versatility
- Small, lightweight
- Adjustable gain
- Shielded and protected, in color coded aluminum case
- Compatible with other 70 series amplifiers, for easy system assembly



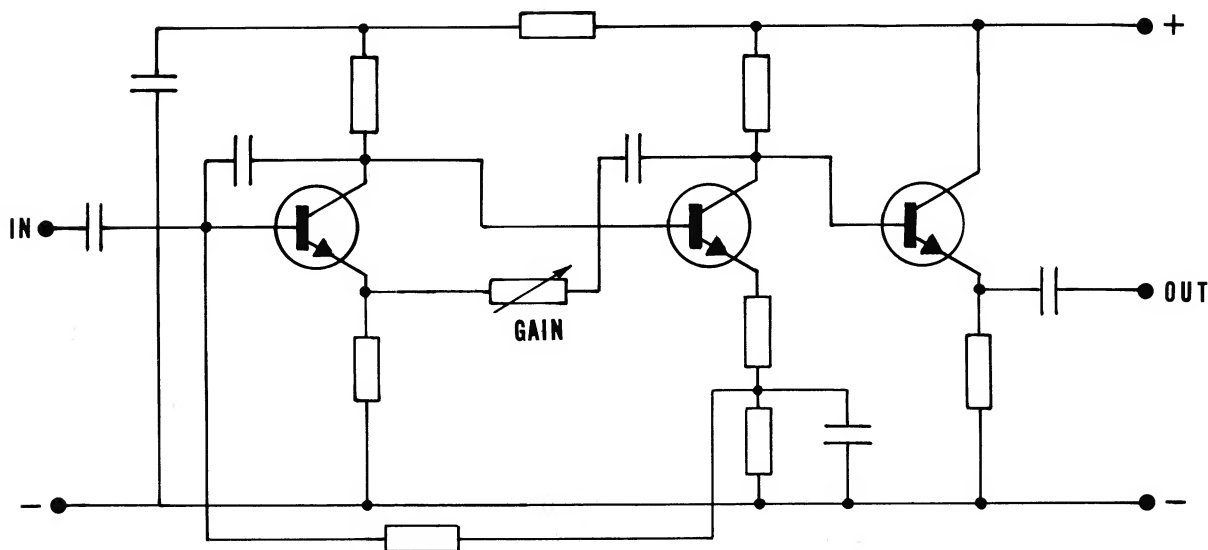
An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

AL-70 MICROPHONE PREAMPLIFIER

SPECIFICATIONS

Input impedance:	50,000 ohms. 50/200 ohms with accessory transformer.
Input level:	Accepts standard professional microphones.
Output impedance:	5,000 ohms.
Output level:	—10 dbm.
Distortion:	Less than 0.5% THD.
Gain:	62 db, plus gain of input transformer.
Noise:	—128 dbm, equivalent input.
Frequency response:	± 1 db, 50 cycles to 15 kc with transformer.
Power required:	20 volts d.c. 3 ma.
Adjustments:	Gain, 36 to 62 db.
Temperature range:	Storage and operating, 0°F to 170°F.
Dimensions:	1 1/8" x 1 1/8" x 3 1/4" plus base 5/8".
Weight:	2 oz.
Case:	Drawn aluminum, light green color.
Mounting:	Octal base to engage standard octal socket.

Accessories: Plug-in input transformer, 50/200 ohms primary, 50,000 ohm secondary. 90 db. shielding.
Regulated power supply.



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DESCRIPTION

A solid state, plug-in module, the AH-70H line amplifier will deliver +20 dbm, across 600 ohms, with negligible distortion. The use of silicon transistors and the careful selection of other components, make this a reliable, stable circuit, capable of maintaining its high gain and low noise characteristics through a long maintenance-free life. Class B output assures efficient, cool operation and low power requirements; only 20 volts d.c. at 50 milliamps, full signal load. All circuit connections terminate in a standard octal plug.

The AH-70H line amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

APPLICATION

The compact AH-70H line amplifier will fulfill many radio-television broadcast, motion picture and other commercial audio requirements. Because of the low current drain, the AH-70H lends itself to battery operation too.

- A. Custom consoles
- B. Custom recording decks
- C. Remote amplifier
- D. Adding channels to existing equipment
- E. Audio distribution systems
- F. Overcoming loss of passive equipment
- G. Booster amp for long line applications
- H. Volume indicator amplifier

FEATURES

45 db of gain, adjustable

+20 dbm output

Better than 65 db, signal-to-noise

Push-pull emitter-follower

Class B, low power drain

Solid state circuitry, silicon transistors

Low distortion

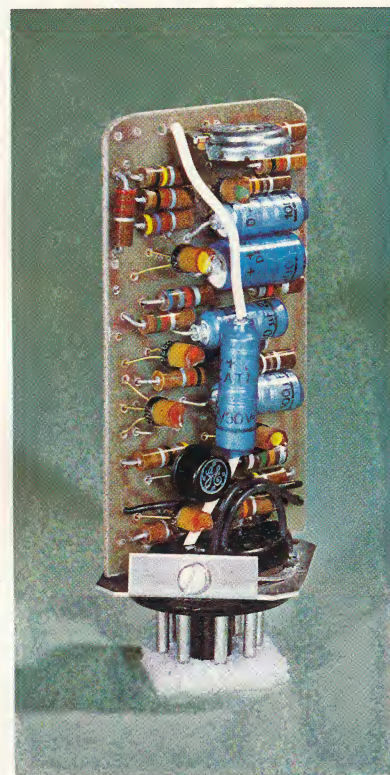
Temperature compensated

Small, compact, lightweight

Plug-in versatility

Shielded and protected, in color coded aluminum case.

Compatible with all other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

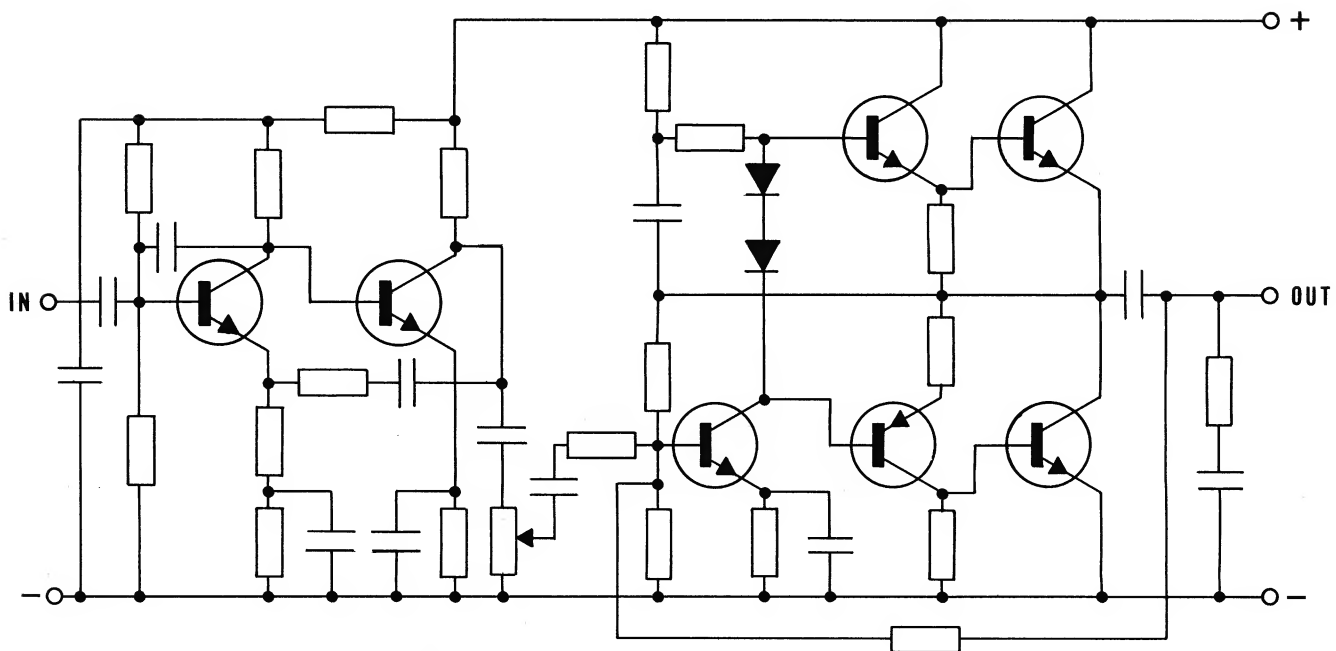
AH-70 LINE AMPLIFIER

SPECIFICATIONS

Input impedance:	10,000 ohms unbalanced.
Output impedance:	0.5 ohm, emitter-follower, 600 ohm transformer.
Output level:	+20 dbm.
Distortion:	Less than 0.5% THD.
Gain:	45 db.
Noise:	Better than 65 db. signal-to-noise.
Frequency response:	± 1 db. 40 cycles to 20 kc. with transformer. 5 cycles to 50 kc without transformer.
Temperature range:	Storage and operating, 0°F to 170°F.
Power required:	20 volts d.c. at 50 ma, full load.
Dimensions:	1 $\frac{1}{8}$ " x 1 $\frac{1}{8}$ " x 3 $\frac{1}{4}$ " plus base $\frac{5}{8}$ ".
Weight:	2 $\frac{1}{2}$ oz.
Case:	Drawn aluminum, blue color.
Mounting:	Octal base to engage standard octal socket.

Accessories:

- Input transformer, bridging, 10,000 ohm.
- Plug-in output transformer, primary impedance 20 ohms, output impedance, 150/600 ohms.
- Regulated power supply.
- Volume indicator.
- Mounting panel.



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DESCRIPTION

This small, solid state monitor amplifier delivers 750 milliwatts, at less than 0.5% distortion, directly into a speaker voice coil. Efficient operation is assured by the use of a push-pull class B output stage, reducing the no-signal current drain to a minimum. Designed for close listening, monitoring applications, this amplifier utilizes plug-in construction for ease in mounting. All circuits terminate in a standard octal plug.

The AW-70L monitor amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

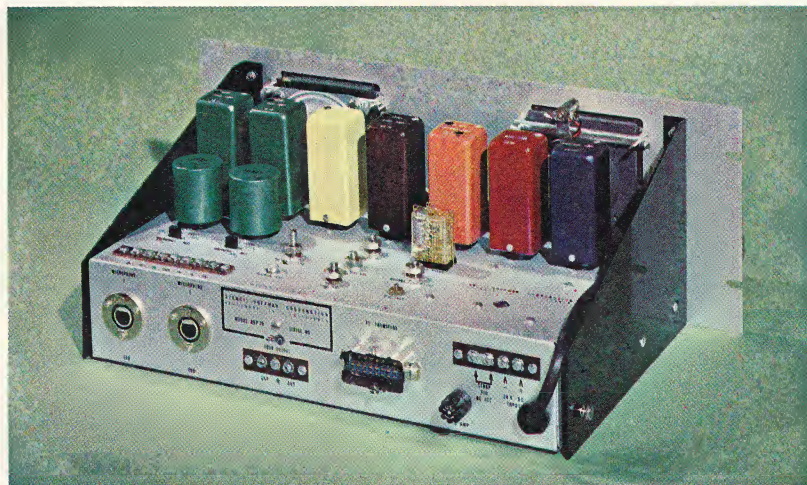
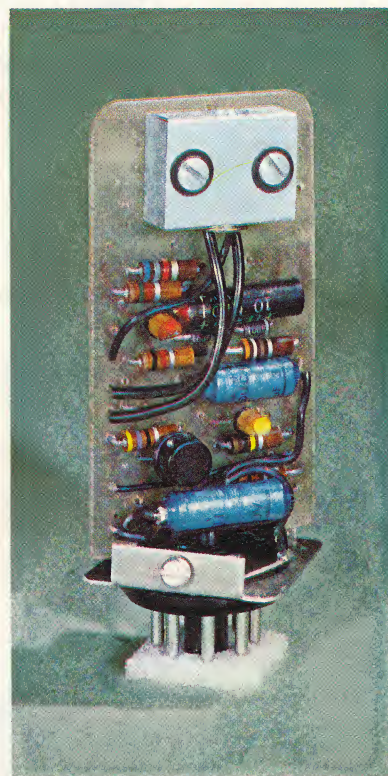
APPLICATION

Space saving and lightweight design, as well as low power requirements, make this monitor amplifier the natural choice for:

- A. Small battery operated, portable amplifier-speaker
- B. Adding speaker output to present equipment
- C. Cue amplifier in console installations
- D. Paging and music distribution systems

FEATURES

- Low current drain
- Very low distortion
- Direct coupled to voice coil
- Rugged and reliable
- Flat response, ± 1 db, 40 cycles to 30 kc.
- No hum
- Signal-to-noise better than 65 db
- Small, lightweight
- Plug-in versatility
- Shielded and protected, in color coded aluminum case
- Compatible with other 70 series amplifiers, for easy system assembly



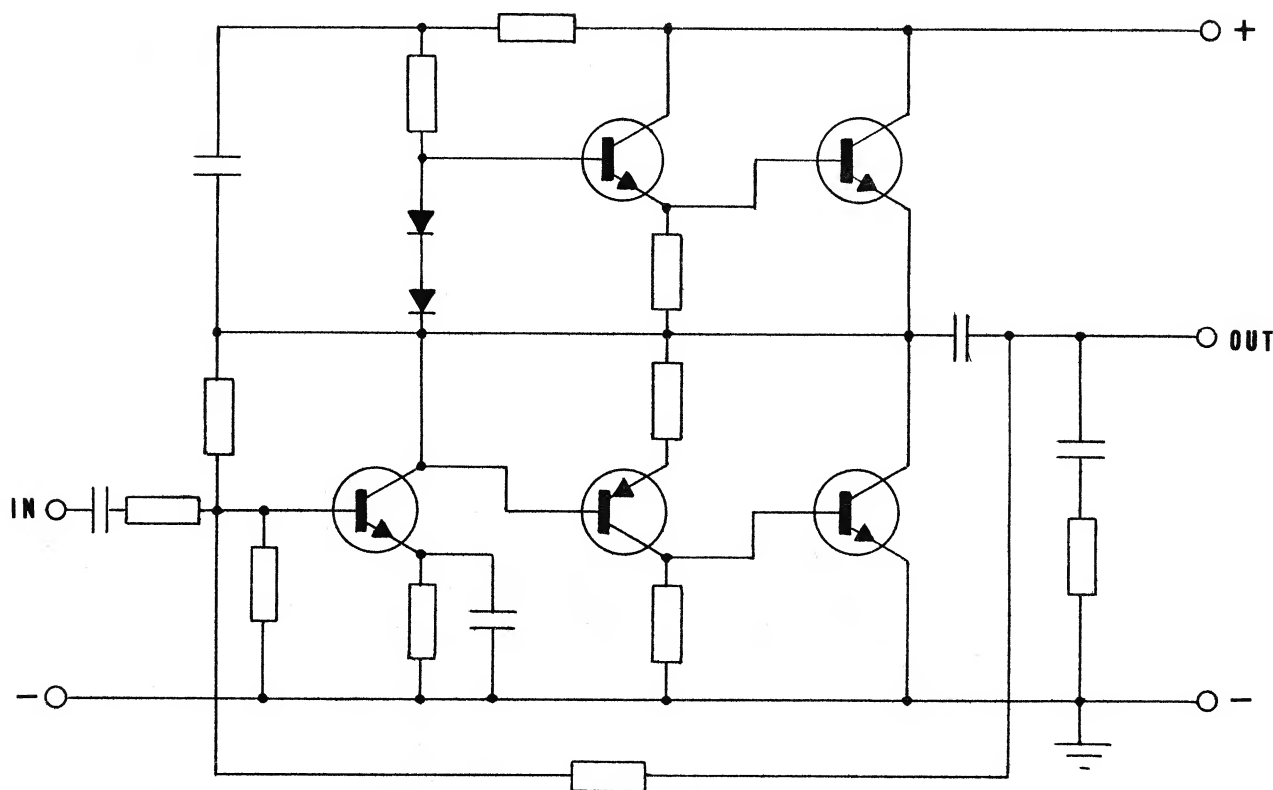
An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

AW-70L MONITOR AMPLIFIER

SPECIFICATIONS

Input impedance:	10,000 ohms, unbalanced.
Input level:	1 volt rms.
Output impedance:	0.5 ohms.
Load impedance:	16 ohms, nominal.
Output level:	750 milliwatts.
Distortion:	Less than 0.5% THD at full output.
Gain:	10 db.
Noise:	Better than 65 db, signal-to-noise.
Frequency response:	± 1 db, 40 cycles to 30 kc.
Power required:	20 volts d.c. at 110 ma full load, 5 ma no load.
Temperature range:	Storage and operating, 0°F to 170°F.
Dimensions:	1 7/8" x 1 7/8" x 3 1/4" plus base 5/8".
Weight:	3 oz.
Case:	Drawn aluminum, brown color.
Mounting:	Octal base to engage standard octal socket.
Adjustments:	None. External volume control required.

Accessories: Regulated power supply.
Loud speaker, 16 ohms, 3 1/2" diameter.



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DESCRIPTION

The compact AR-70 record amplifier provides a wide range of equalization while driving a magnetic recording head. With low frequency adjustment from 0 db to +15 db at 40 cycles and high frequency adjustment from 0 db to +25 db at any frequency above 3 kc, all standard recording curves can be matched. The output of this plug-in amplifier works into all head impedances and the power requirement of the solid state circuitry is minimal; 20 volts d.c. at 8 ma. The unit is engineered for maintenance free operation under adverse environmental conditions. All circuits terminate in a standard octal plug.

The AR-70 record amplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

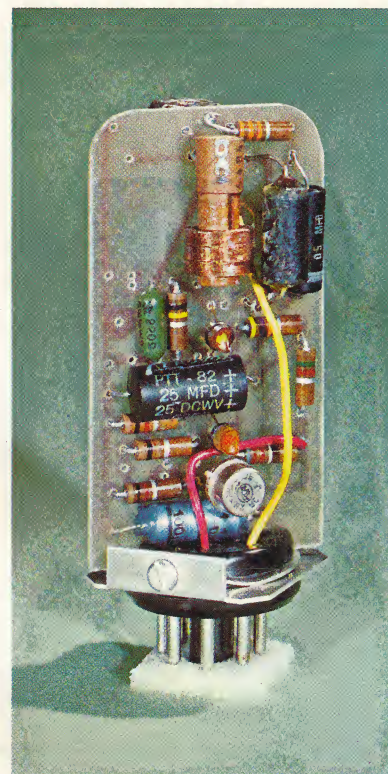
APPLICATION

Used individually or in multi-track installations, the AR-70 proves to be a most versatile recording amplifier. With its low power requirements and its rugged plug-in construction, it will simplify installation and maintenance in new or existing equipment.

- A. Custom construction of low distortion recorders
- B. Converting existing equipment for stereo
- C. Construction of multi-channel recorders
- D. Converting and upgrading older vacuum tube amplifiers

FEATURES

- Low noise silicon transistors
- High temperature stability
- Reserve power, low distortion
- No microphonics
- Low and high frequency equalization to meet any standard curve
- Plug-in versatility
- Small, lightweight
- Shielded and protected, in color coded aluminum case
- Compatible with all other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AR-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

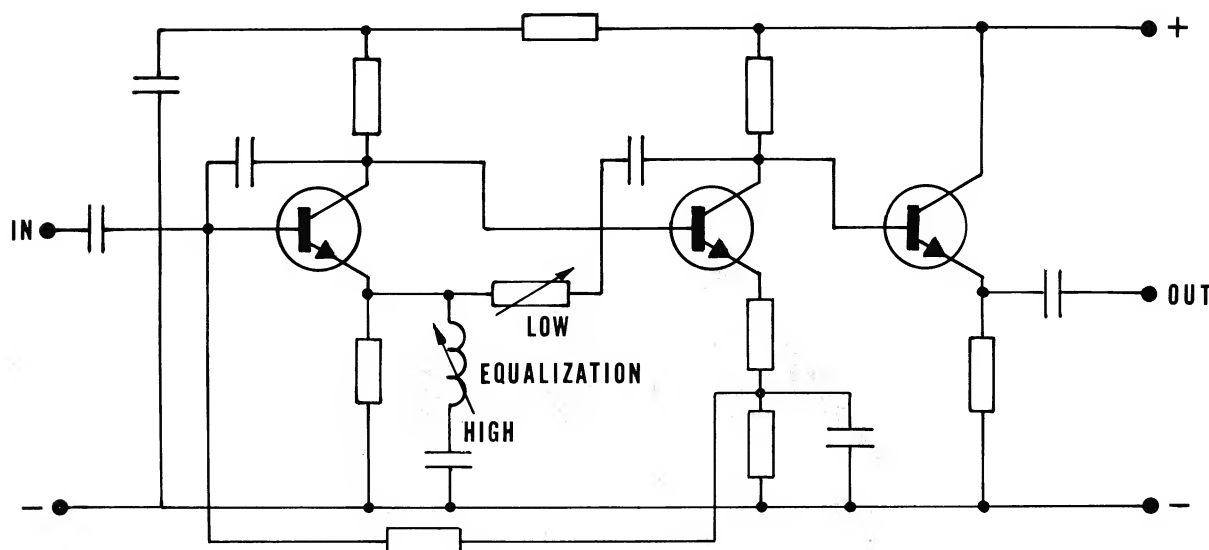
AR-70 RECORD AMPLIFIER

SPECIFICATIONS

Input impedance:	50,000 ohms.
Input level:	—25 dbm for normal recording.
Output impedance:	5,000 ohms, emitter-follower.
Record head requirements:	Ideal head impedance 50-60 mh but will operate heads from 5mh to 200 mh.
Distortion:	Less than 0.5% THD at normal level.
Noise:	—65 dbm.
Frequency response:	Adjustable equalization to match any U.S. or International standard.
Adjustments:	Low frequency equalization, R/C network 0 to +15 db at 40 cycles. High frequency equalization, L/C network 0 to +25 db at any frequency above 3,000 cycles.
Power required:	20 v.d.c. at 8 ma.
Temperature range:	Storage and operating 0°F to 170°F.
Dimensions:	1 $\frac{1}{16}$ " x 1 $\frac{1}{16}$ " x 3 $\frac{1}{4}$ " plus base $\frac{5}{8}$ ".
Weight:	2 oz.
Case material:	Drawn aluminum, orange color.
Mounting:	Octal base to engage standard octal socket.

Accessories: Regulated power supply.
Bias trap for 80 kc.
Magnetic heads.

Note: Specify film or tape speed when ordering.



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DESCRIPTION

Designed for amplifying the output of magnetic tape heads, the AP-70 playback preamplifier provides equalization adjustment to meet all U.S. and International standards. An exceptional signal-to-noise ratio and low total harmonic distortion content are accomplished through careful design, incorporating the latest silicon transistors of the NPN type. High in gain but non-microphonic, rugged and maintenance free, this plug-in unit requires only 20 volts d.c. at 3 ma. All connections terminate in a standard octal plug.

The AP-70 playback preamplifier uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

APPLICATION

The AP-70 is the answer to preamp problems when expanding into multiple channel playback. Small, versatile and easily incorporated into existing equipment as well as construction of custom magnetic playback equipment.

- A. Adding stereo to present magnetic transports
- B. Building custom multichannel tape equipment
- C. Upgrading existing equipment

FEATURES

- Low noise silicon transistors
- No microphonics
- Low distortion
- High gain
- Adjustable equalization
- High temperature stability
- Small, lightweight
- Plug-in versatility
- Shielded and protected, in color coded aluminum case
- Compatible with all other 70 series amplifiers, for easy system assembly



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

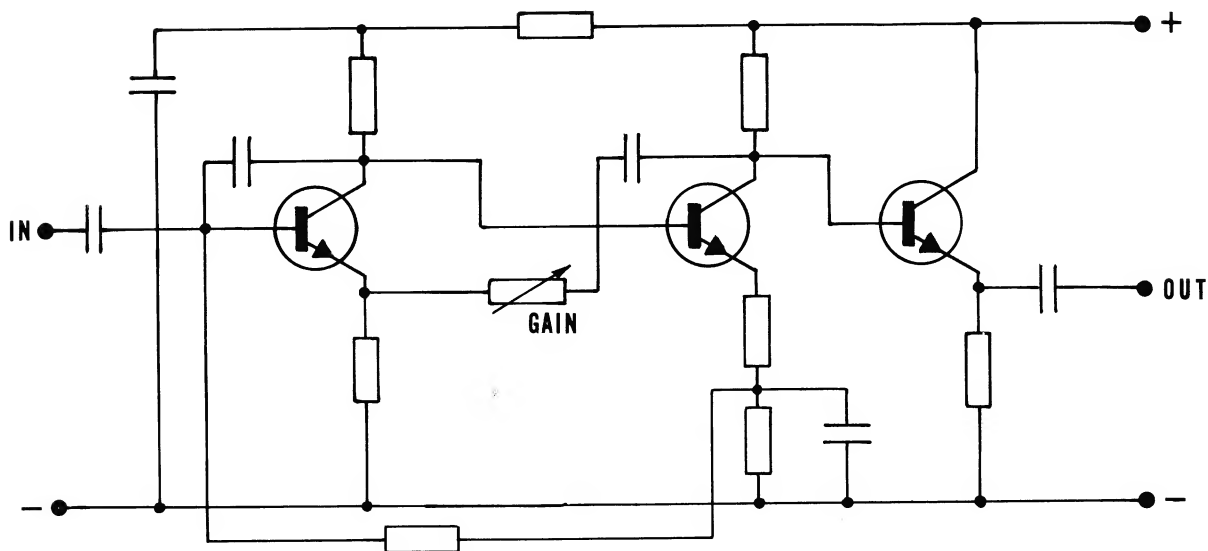
AP-70

PLAYBACK AMPLIFIER

SPECIFICATIONS

Input impedance:	50,000 ohms.
Output impedance:	5,000 ohms, emitter-follower.
Output level:	—10 dbm.
Distortion:	Less than 0.5% THD.
Gain:	55 db.
Noise:	Better than 65 db, signal-to-noise.
Frequency response:	Adjustable to meet any U.S. or International standards.
Adjustments:	High Frequency equalization, R/C network.
Power required:	20 v.d.c. at 3 ma.
Temperature range:	Storage and operating, 0°F to 170°F.
Dimensions:	1 1/8" x 1 1/8" x 3 1/4" plus base 5/8".
Weight:	2 oz.
Case:	Drawn aluminum, light blue color.
Mounting:	Octal base to engage standard octal socket.

Accessories: Regulated power supply.
Magnetic heads.



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DESCRIPTION

The AO-70 bias oscillator delivers a low distortion sine wave for bias and erase functions in magnetic recording equipment. The push-pull silicon transistor circuit furnishes enough current to easily drive four 50 mh record heads and an erase head. Several AO-70s may be interlocked for operation of more than four channels. Compact and cool in operation, the power requirements are only 20 volts d.c. at 200ma. All circuits terminate in a standard octal plug.

The AO-70 bias oscillator uses a printed epoxy circuit board of the highest quality. Connections are hand soldered and tested for maximum reliability. Components are standard and easily accessible should service be necessary.

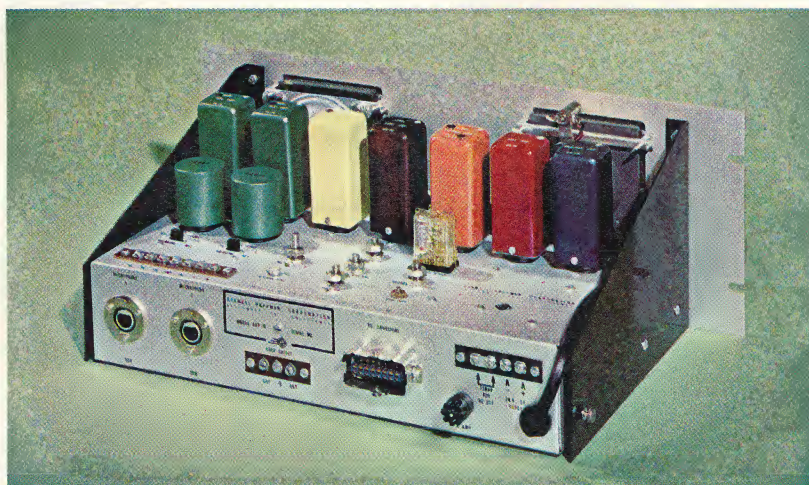
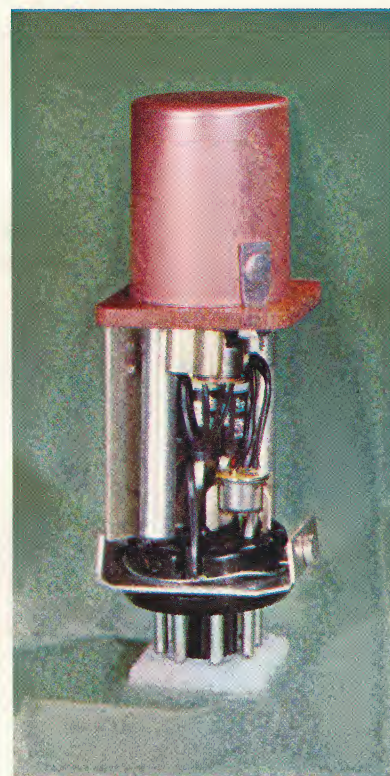
APPLICATION

Easily installed, the stable AO-70 bias oscillator is conveniently worked into plans calling for single or multiple bias requirements.

- A. Building custom low distortion recorders
- B. Converting to multichannel operation on existing recorders
- C. Adding erase functions to existing equipment
- D. Upgrading existing bias and erase equipment

FEATURES

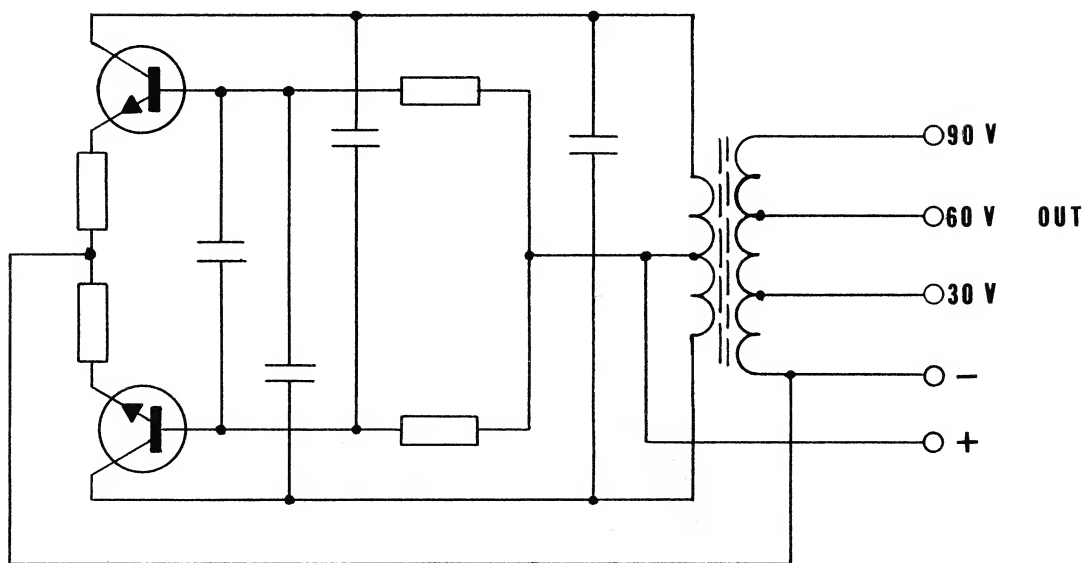
- Adjustable output
- Low sine wave distortion
- High output power
- High output frequency, 80 kc
- Flexible in application
- Economical transistor operation
- Uses silicon transistors for temperature stability
- Plug-in versatility
- Small, compact, lightweight
- Shielded and protected, in aluminum color coded case
- Compatible with other 70 series modules



An illustration in the use of the model 70 series module is the new Stancil-Hoffman ARP-70 mixer-record-playback unit. From left to right are two AL-70 microphone preamplifiers, the AP-70 preamplifier, the AH-70H line amplifier, AR-70 record amplifier, AO-70 bias oscillator and the AW-70L monitor amplifier which feeds a built-in speaker.

Output voltage:	30v, 60v, 90v taps. 45 ma maximum.
Output:	Push-pull, transformer. Will drive four-channel record head plus erase head.
Frequency:	80 kc. Provision to interlock several AO-70s to prevent beating.
Record head requirements:	Ideal inductance 50 to 60 mh but will operate heads from 5 to 200 mh.
Erase head requirement:	Nominal 2.5 mh.
Power required:	20 volts d.c. at 200 ma.
Temperature range:	Storage and operating, 0°F to 170°F.
Dimensions:	1 1/8" x 1 1/8" x 3 1/4" plus base 5/8".
Weight:	4 oz.
Case:	Drawn aluminum, red color.
Mounting:	Octal base to engage standard octal socket.
Adjustments:	None. External bias adjustment required for each recording channel.

Accessories: Regulated power supply.
Magnetic heads.



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PRICE LIST

These A70 Series Amplifiers are engineered for the highest quality tape and film recorders and are used in the professional lines of equipment produced by the Stancil-Hoffman Corporation. Each amplifier is accompanied by a circuit diagram and basic application notes, however, the Corporation cannot supply further engineering and design assistance in special uses of these amplifiers in customers' equipment nor is the Corporation responsible for any patents covering the design or use of these amplifiers.

<u>ITEM</u>	<u>MODEL NO.</u>	<u>DESCRIPTION</u>	<u>PRICE</u>
Microphone Preamplifier	AL70	A very low noise microphonic-free and flat response microphone preamplifier with adjustable gain for close talking or distant pickups	32.75
Record Amplifier	AR70	Versatile low distortion amplifier with adjustments to match any equalization curve	34.75
Playback Amplifier	AP70	High gain, low noise, low distortion amplifier capable of equalizing any head for any reproduce curve	34.75
Line Amplifier	AH70	A compact booster amplifier offering flat response, distortion-free output to drive volume indicators and feed transmission lines	39.75
Monitor Amplifier	AW70L	An ideal "power" amplifier to directly drive a monitor speaker voice coil and "ear wig" headphones. Transformless output at very low impedance	39.50
Bias Oscillator	AO70	A push-pull oscillator with ample power for "birdie free" wide range erasing and recording single track or stereo	39.50

Prices and specs subject to change without notice
Quantity prices above 25 pieces of a model

Printed in U.S.A.
15M4601



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ACCESSORIES

ITEM	MODEL NO.	DESCRIPTION	PRICE																																				
Microphone Transformer	TF12828	Quadruple shielded torroid input transformer to match 50/200 ohm microphones to the AL70 preamplifier. Octal plug connection.	22.50																																				
Power Supply	P70	A complete fused, hum free, regulated DC supply to power a group of A70 Series of amplifiers. Input 117/230 volts single phase to a nominal 20 volts output at 400 mils. 9 pin octal type plug connection furnished with panel mounting socket.	78.50																																				
Magnetic Heads		A full complement of unmounted record, reproduce and erase heads, - full track stereo, half and quarter track. The recording and playback heads are designed for maximum resolution and to match the AR70 and AP70 amplifiers.																																					
	<u>TYPE</u>	<table><tr><th colspan="2"><u>RECORD</u></th><th colspan="2"><u>PLAYBACK</u></th><th colspan="2"><u>ERASE</u></th></tr><tr><th>Model</th><th>Price</th><th>Model</th><th>Price</th><th>Model</th><th>Price</th></tr><tr><td>Full Track</td><td>FTR 33.50</td><td>FTP 33.50</td><td>FTE 14.50</td><td></td><td></td></tr><tr><td>Two Track Stereo</td><td>TTR 23.50</td><td>TTP 23.50</td><td>TTE 12.50</td><td></td><td></td></tr><tr><td>Quarter Track</td><td>QTR 21.50</td><td>QTP 21.50</td><td>QTE 12.50</td><td></td><td></td></tr><tr><td>Half Track</td><td colspan="5">(Same as stereo - use one track)</td></tr></table>	<u>RECORD</u>		<u>PLAYBACK</u>		<u>ERASE</u>		Model	Price	Model	Price	Model	Price	Full Track	FTR 33.50	FTP 33.50	FTE 14.50			Two Track Stereo	TTR 23.50	TTP 23.50	TTE 12.50			Quarter Track	QTR 21.50	QTP 21.50	QTE 12.50			Half Track	(Same as stereo - use one track)					
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Half Track	(Same as stereo - use one track)																																						
Bridging Input Transformer	TF12910	An inexpensive octal plug-in miniature transformer to provide a bridging input for the AR70 and AH70 amplifiers.	17.50																																				
Output Transformer	TF12880	Torroidly wound on a special core, this transformer ideally matches the output of the AH70 line amplifier to feed a 600/150 ohm line. Uses octal plug.	22.50																																				
Volume Indicator	V170	An attractive rectangular "picture frame" window meter with true V. U. ballistics.	19.50																																				
Loudspeaker	LS	Excellent quality miniature speaker with special voice coil to match AW70L monitor amplifier. Perfect for low level monitoring.	3.50																																				